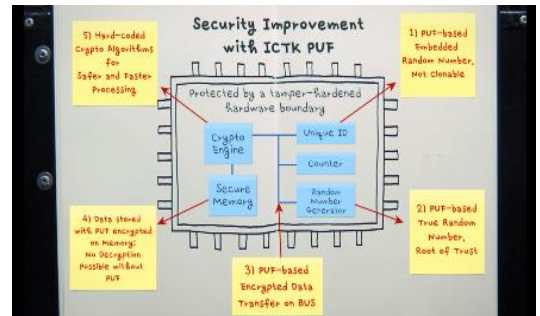


PUF (Physically Unclonable Functions) is



A term referring to "functions that cannot be physically duplicated," it is an immutable function that can withstand any hacking attempt, **and is the basis of IoT security solutions.**

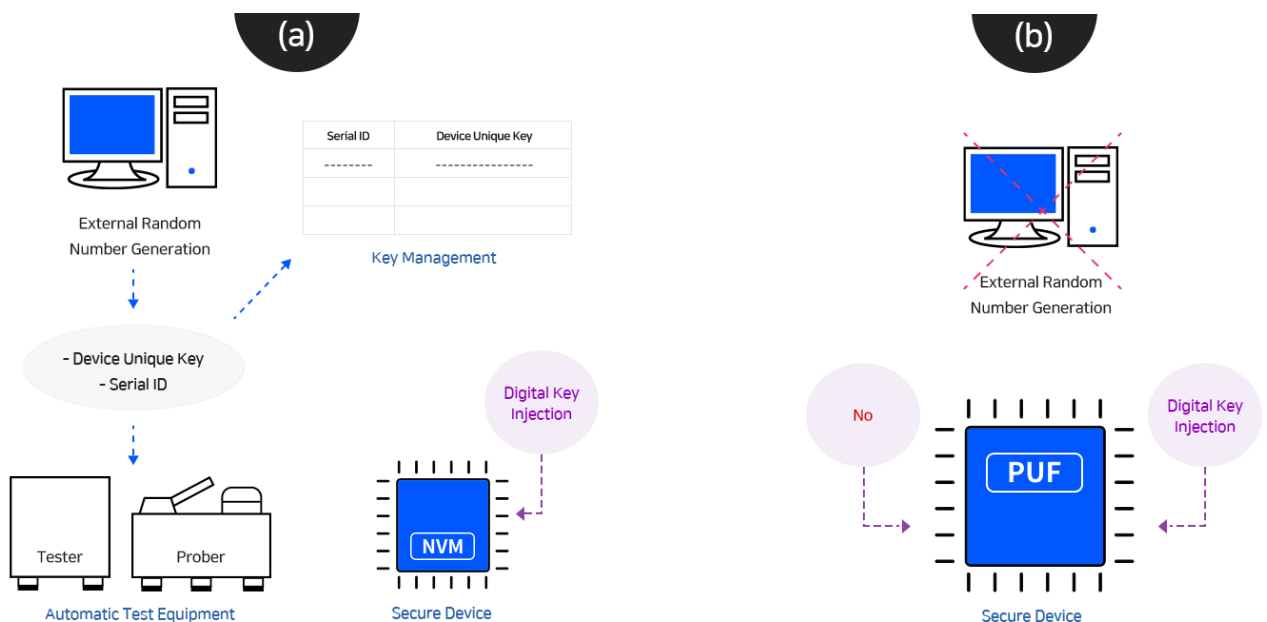


https://www.youtube.com/watch?v=Nn8_buFS32g



Since each semiconductor chip generates a different unique ID, it is called the fingerprint of semiconductors.

It does not involve generating and injecting a unique ID from the outside. Instead, the encryption key is generated inside the semiconductor chip. **This makes it impossible for the key to be leaked, which is the core of IoT security. (See Figures (a) and (b)).**

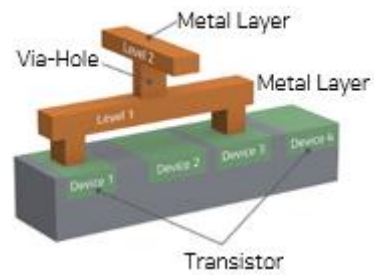


ICTK's VIA PUF, an Ideal Root of Trust Solution

What is VIA PUF using Passive Element of Circuit?

· Metal Layer and VIA Hole

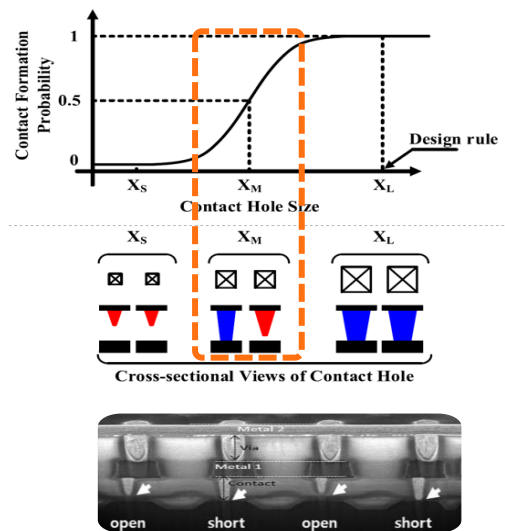
In Semiconductor IC, there are several layers of metal substrate to connect the circuit, and VIA -holes vertically pass through the layers with a specific design rule of the hole diameter.



· VIA-Holes Random Behavior

At a certain hole size (smaller than the standard design rule), they appear "open or short" at random (not by design) during the FAB process by process deviation.

"ICTK's Know-How"



· Inborn Unique ID

The combination of "open (0) and short (1)" is used to generate the PUF's random unique ID, and PUF Key is derived from this through KDF.

